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ABSTRACT

Since 1995, when the College of Arts, Science, and Technology (CAST) became the University of Technology, Jamaica (UTech), it has been working to integrate the best features of CAST's polytechnic tradition with the academic and research culture necessary in a university. Central to CAST's success has been its partnerships with business and industry. UTech is in the process of refining and strengthening the Program Advisory Committee system, the workplace training component of its undergraduate programs, its linkages with other training institutions (both technical and vocational education and training and tertiary) and like-minded external institutions. To these existing institutions, UTech is adding the Jamaica Teaching Company Scheme and a Technology Innovation Center, a business incubator for Jamaica. As the UTech undergoes this cultural transition, it is faced with myriad challenges, such as gaining the trust of industry, assisting staff inherited from CAST in making the cultural leap to UTech, creating the kind of environment in which people want to perform outstandingly, and helping students caught in the transition gain rather than lose in the process. (YLB)

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Crossroads of the New Millennium

Systems And Strategies At The University Of Technology, Jamaica To Strengthen The Education/Industry Interface

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A. Billingsley

Monday 10 April, 2000

Workshop 2

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Abstract

Since 1995, when the College of Arts Science and Technology (CAST) became the University of Technology, Jamaica (UTech), the institution has been working to integrate the best features of CAST's polytechnic tradition with the academic and research culture necessary in a university. Central to CAST's success were its partnerships with business and industry: training in all programmes involved the workplace, and the College listened to the needs of employers in designing its programmes.

UTech is in the process of refining and strengthening the Programme Advisory Committee system, the workplace training component of its undergraduate programmes, its linkages with other training institutions (both TVET and tertiary) and like-minded external institutions. To these existing initiatives, UTech is adding the Jamaica Teaching Company Scheme and a Technology Innovation Centre, a business incubator for Jamaica.

However, as the University undergoes this cultural transition, it is faced with myriad challenges: how does the University gain the trust of industry? How does UTech assist the staff it inherited from CAST to make the cultural leap to the University? How can UTech create the kind of environment in which people will want to perform outstandingly? How do the students caught in the transition gain rather than lose in the process?

Using the paper as background, the workshop will address these four questions.

Systems and Strategies at the University of Technology, Jamaica to Strengthen the Education/Industry Interface

THE UNIVERSITY OF TECHNOLOGY, JAMAICA (UTECH)

At the apex of the TVET system in the English-speaking Caribbean, the University of Technology, Jamaica (UTech) has emerged from the 37-year-old tradition of the College of Arts Science and Technology (CAST). Building on CAST's polytechnic tradition, UTech is undertaking new initiatives to establish itself as a technical university offering innovative, creative programmes of international quality to both Jamaica and the wider Caribbean.

CAST built an enviable reputation in the region for its ability to provide students with practical skills, which made them immediately valuable in the workplace. UTech has retained CAST's *polytechnic* traditions, but added emphasis on professional qualifications and research in the *university* tradition.

JAMAICA'S NATIONAL INDUSTRIAL POLICY (NIP)

The vision of the NIP is a government/private sector partnership using science and technology as the engines to stimulate industrial growth and productivity. The improvement in economic growth resulting from this burgeoning industrial sector, according the Policy, will lead to an improved and restructured society. The Policy cannot be achieved without a vibrant education/industry interface.

Central to S&T-driven growth is a well-trained, creative work force supplying the needs of the industrial sector, which, in turn, requires an ongoing dialogue between educational and industry. UTech is a leading voice in this dialogue.

UTECH'S STRATEGIES AND SYSTEMS TO STRENGTHEN THE EDUCATION/INDUSTRY INTERFACE

The key to the success of the education/industry interface is meaningful dialogue. Traditionally, educators have assumed that their role is to provide knowledge to eager listeners; however, the education/industry interface begins from the assumption that educators must *listen* first. This assumption, combined with a partnership approach, ensures the relevance and quality of UTech's programmes to national development. Illustrations of Itch's strategies are briefly described in the following section.

THE ROLE OF THE PROGRAMME ADVISORY COMMITTEE

Programme Advisory Committees are among the University's most important sources of up-to-date external information. They ensure the quality and relevance of programmes and instructional methods. Schools rely on their Programme Advisory Committees to contribute to the maintenance of standards and quality by determining employment needs, recommending relevant course/programme content, advising on appropriate qualifications and experience for lecturers, recommending appropriate resources to support the programme delivery, annually reviewing student achievement, ensuring that wider societal and professional interests are reflected in the programme design and content, and helping to obtain on-the-job learning opportunities for students in the programme. The Advisory Committees, therefore, are the leading edge interface with business and industry, ensuring that programmes speak to their manpower needs.

MEMBERSHIP OF ADVISORY COMMITTEES

Advisory Committee membership includes employers, professionals, representatives of related industry, commerce or professional groups, educators, government and recent graduates of the programme. Recently, aided by the advent of electronic communications, the membership has been expanded to include international members, who may be unable to attend meetings but can comment on broad policy issues. The University's membership on the Committees is ex officio and in a resource capacity.

INTEGRATING SYSTEMS AND LINKAGES WITH OTHER TVET INSTITUTIONS

There are various other TVET institutions in the country and the region, which feed into the University. These linkages enable students an opportunity to enter UTech programmes.

COMMUNITY COLLEGE FRANCHISES

UTech offers franchises of the first years of selected programmes through Community Colleges in other parts of the country. The franchise system enables students who are geographically distant from the campus to enrol in UTech programmes delivered close to their homes. Upon successful completion of these early years, the students are guaranteed admission to the programme's upper division at UTech. The quality of programme delivery is monitored by UTech in collaboration with the Office of Curriculum Development and Evaluation. The Academic Board approves the minimum criteria and policies, which govern the operation of franchise programmes.

HEART/NTA COLLABORATION

The entry level of the TVET system in Jamaica is the Human Employment and Resource Training Trust/National Training Agency (HEART/NTA), which is responsible for the provision of skills training for young people and adults at the NVQ levels 1, 2 and 3.

Because Jamaica aspires to the creation of a seamless TVET system through all levels of technical and vocational training to avoid duplication and waste, UTech and HEART/NTA have been working on establishing formal linkages for students to be able to access UTech programmes. UTech and HEART/NTA have signed a Memorandum of Understanding that will create ladders and bridges between the training programmes offered by the two institutions.

In the summer of 2000, diplomats of HEART/NTA's Teaching Diploma[1] will be able to enter a bridging programme in UTech's School of Technical and Vocational Education to pursue a B. Ed. on a part-time basis. This programme is evidence of the possibility of integrating the TVET system in Jamaica.

COMMONWEALTH OF LEARNING (COL)/UTECH DIPLOMA IN TVET TEACHER TRAINING BY DISTANCE

In September, 2000, UTech will begin a pilot collaboration with Community Colleges in the Eastern Caribbean to deliver the COL-developed TVET Teacher Training curriculum. UTech will manage this pilot through franchise agreements with participating Colleges. The programme is exciting to UTech for a number of reasons: first, because it will meet regional needs for the development of trained TVET teachers; secondly, because it is strengthening UTech's regional linkages, and thirdly, because it is initiating distance education possibilities at UTech.

COLLABORATION WITH THE UNIVERSITY OF THE WEST INDIES (UWI)

The University has formed a partnership with UWI to offer a joint Bachelor's Degree in Hospitality and Tourism Management. This partnership with UWI is overseen by the UTech

[1] Offered at the Vocational Training and Development Institute, which operates as part of the HEART/NTA mandate.

Programme Advisory Committee for Hospitality and Tourism Management and managed by a Steering Committee comprised of senior administrators and academicians from both institutions.

The programme includes foreign languages and management and incorporates required work experience as an integral component.

INITIATING SUCCESSFUL WORKPLACE AND PRACTICUUM OPPORTUNITIES FOR STUDENTS AND FACULTY MEMBERS

Perhaps the most important structural feature of UTech's programmes is the workplace initiative which is integral to virtually all of its diploma and undergraduate, and graduate[2] degree programmes. At least a year of work experience is required to enter any post-Diploma programme; students have work placements as part of Engineering Diploma and Degree programmes; all Pharmacy and Medical Technology students must undertake clinical internships in order to graduate; Architecture students must have two years' relevant work experience in order to enter the Master's programme; Hospitality and Tourism students must have two summers' work in the industry to graduate.

Ensuring the *quality* of learning experiences in work placements and *equivalency* of the work experiences for students is challenging. Ensuring adequate, appropriate student supervision in the work place is the primary challenge: to address this issue, UTech provides competency-based assessment tools[3] and specialised training to enable workplace supervisors to evaluate the students' progress. Academic faculty also monitor the students (and their supervisors) during the work experience, and are available to assist either students or their supervisors as needed. To enable faculty members to keep their skills and knowledge current, Programme Advisory Board members assist selected academic staff to work in industrial or business settings to be aware of the latest practices.

[2] Graduate degrees which are earned by taught courses.

[3] In some cases these are still under development.

THE JAMAICAN TEACHING COMPANY SCHEME (JTCS)

The University's Academic Directors[4] have brought to UTech the Jamaican Teaching Company Scheme (JTCS), an integrated approach to increasing collaboration between the University and the workplace which is advantageous to both and strengthens the linkage between them. The Scheme involves collaborative efforts between academic(s) and student associates on the one hand and a company on the other. The relationship is built on finding a solution to a problem which a company has. The working partnership revolves around the activities of associates, usually graduate students who are interested in an action research approach to a higher degree or qualified employees of the company itself who can be assigned to the problem-solving team. UTech faculty with relevant experience and academic background supervise the associates, who work in the "teaching company" to solve the identified problem. The venue for training is the company, where the faculty member visits regularly to advise on the solution to the problem, assess the associate's progress, and measure the satisfaction of the company with the direction of the project.

UTech is involved in the first implementation of the Jamaican Teaching Company Scheme at J. Wray & Nephew Limited, an ISO-certified Jamaican firm with a 250-year-old production pedigree and international distribution. UTech assembled a multi-disciplinary team from across its faculties which visited the company to listen to the concerns and interests of top management and examine its production and distribution systems. Drawing on the diverse expertise of the UTech team, including the Multi-Media Centre, UTech is proposing an integrated IT system which will enable the company to monitor its operation and distribution efficiency.

THE TECHNOLOGY INCUBATOR CENTRE

The concept of the Technology Innovation Centre grew out of the University's Entrepreneurial Centre, the original strategy the institution used to strengthen the capability of local small business enterprises and build the education/industry interface. After a decade of providing entrepreneurship skills to students in the institution through the

[4] The Director of Curriculum Development and Evaluation and the Director of Graduate Studies and Research have adapted the British Teaching Company Scheme to suit Jamaican circumstances.

Entrepreneurship Centre, the University has taken advantage of the growing world-wide realisation that microenterprises and fledgling businesses not only need training in business management skills, but also need a nurturing environment in which to grow at the initial stages of their operation. The University, therefore, applied to the Caribbean Development Bank (CDB) and the Canadian International Development Agency (CIDA) to establish a Technology Innovation Centre (TIC) on the University campus.

The TIC aspires to maximise the potential for success of emerging companies. Providing in its own operations a dynamic model of best practices in successful business operations, the TIC is designed to accelerate the growth and success of entrepreneurial companies through the provision of an array of business support resources and services. Its main goal is to produce successful firms which will "graduate" from the Centre as financially viable, freestanding entities that will create jobs, and commercialise critical new technologies, strengthening the Jamaican economy.

STRATEGIC ALLIANCES WITH EXTERNAL ORGANISATIONS:
THE WORLD ASSOCIATION FOR CO-OPERATIVE EDUCATION (WACE)[5]

The interface between UTech and the industrial community in Jamaica has been strengthened significantly through membership in the World Association for Co-operative Education (WACE). WACE is strategic in the field of practice-oriented education, supporting co-operative education programmes in countries around the world. Its members include representatives of businesses, government, professional organisations and higher education institutions. A member of the UTech staff has served on the WACE Executive Board since 1996.

CARISCIENCE

CARISCIENCE is a UNESCO-sponsored regional network, recently established to promote and channel co-operation, communication and exchange among basic and applied science graduates and R&D programmes in the Caribbean in order to promote and strengthen the application of sciences to economic and social development in the region. Its membership

[5] Further information about WACE and its activities and programmes is available by writing to WACE, 360 Huntington Avenue, Suite 384 CP, Boston MA 02115, USA (tel: 617-373-8885; fax: 617-373-3463; e-mail: pfranks@waceinc.org

includes leaders from academia, business and industry: both the developers and users of scientific information. The Jamaican representative on the CARISCIENCE Advisory Board is from UTech.

CHALLENGES OF STAFF RECRUITMENT AND UPGRADING IN THE TRANSITION PROCESS

UTech was accorded university status in 1995; its Charter was passed by Parliament in June 1999. Therefore, the transition from College to University is still underway.

The "good news" and "bad news" both have been UTech's inheriting a full staff complement from CAST: on the one hand, academic faculty familiar with the traditions of the College and its work-related focus were in place in all programmes; on the other hand, many of these staff members did not have the academic credentials to teach at the University level. Some staff had been teaching at CAST for more than twenty years: their classroom approach was primarily to dictation of notes for students to regurgitate in examinations – a teacher-centred style of teaching/learning which is antithetical in many cases to experiential learning. The espoused University culture now speaks to producing graduates who can ...learn independently, reason clearly, think critically, communicate effectively apply their knowledge and skills to the development and improvement of society, and be adaptable in a rapidly-changing work environment.[6]

To meet this vision of the capability of the UTech graduates, the University has been promoting student-centred learning. The Office of Curriculum Development and Evaluation has been training a cadre of Faculty Coaches in student-centred learning and innovative testing and assessment methods to assist academic staff in adapting to the new University culture.

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[6] *Academic Development Plan 1998-2002*, University of Technology, Jamaica (Kingston: UTech, 1999), pp.20-21.

In addition, those staff members who are without the minimum academic qualifications acceptable for teaching at the University have been given a deadline to acquire the minimum level of academic qualification needed to teach at the University[7].

The University has put teaching quality at the forefront of its institutional objectives; to improve teaching quality, academic staff without teaching credentials are required to enrol in a Post-Diploma programme in instructional methods, conducted by the Faculty of Education and Liberal Studies.. At the same time, those without appropriate academic qualifications are expected to enrol in a Masters level programme relevant to their teaching discipline to upgrade themselves.

To assist the transformation, the University has been attempting to "seed" the Faculties with academic staff who have established reputations. The Office of Graduate Studies and Research has been encouraging Faculties to identify "niche" areas for research, and then recruit staff to support research and graduate work in these niche areas. This strategy is beginning to bear fruit in the School of Engineering and the School of Pharmacy and Health Science. However, the lack of turnover in more established staff is slowing the process.

The transformation from the College culture to the University culture, in teaching, research, quality assurance strategies, publication and service to the larger community, is underway, but it is slow to develop among those who have been in the institution for a long time.

SUMMARY OF THE UTECH EXPERIENCE

The key issues for UTech in ensuring quality in the interface between the workplace and the university have been the judicious use of Advisory Committees for all programmes, linkages with other TVET institutions and workplaces that have a similar commitment to experiential learning; the creation of successful workplace and practicum experiences for students; the introduction of the Jamaica Teaching Company Scheme; the development of a Technology

[7] The importance of this upgrading cannot be over-emphasised: the University's programmes will not be accredited, either locally by the University Council of Jamaica or internationally by relevant professional accrediting bodies, if the academic staff do not meet at least the minimum university-level teaching requirement.

Innovation Centre; the interaction with external bodies committed to similar goals and objectives, and the encouragement of faculty upgrading.

The combination of all of these initiatives is leading to the development of UTech as a high calibre internationally recognised technical university.